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蝶と蛾 *Trans. lepid. Soc. Japan* **51** (2): 119-126, March 2000

Two new species of the genus *Faristenia* Ponomarenko, 1991 (Lepidoptera, Gelechiidae) from Japan

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Abstract Two new species of the gelechiid genus *Faristenia* are described from Japan.

Key words Gelechiidae, *Faristenia*, new species, Japan.

The genus *Faristenia* was established for *Faristenia omelkoi* Ponomarenko, 1991 (type species) and its closely related species (Ponomarenko, 1991), and later its monophyly was supposed on the basis of two synapomorphies (Ponomarenko, 1997*a*). The adults of *Faristenia* are externally similar to those of the genera *Hypatima* Hübner, 1825 and *Anarsia* Zeller, 1839, however, *Faristenia* can be separated from them by the presence of hindwing hair pencils in the male. The genus is represented by 22 species mainly distributed in the Palaearctic region (Ponomarenko, 1991, 1997*b*; Park, 1993; Park & Ponomarenko, 1996; Li & Zheng, 1998), and five species were recorded from Japan by Park (1993) and Ueda *et al.* (1995). In this paper, we describe two new species of the genus *Faristenia* from Japan.

The terminology of the male genitalia mainly follows Ponomarenko (1991). The term valvella which was proposed by Birket-Smith (1965) for the arctiid subfamily Lithosiinae was used for the basal lobe of the valva which is also recognized in the genus *Hypatima* and its related genera (Ponomarenko, 1992, 1997*a*). This lobe has been called various terms, *viz.*, labides (Diakonoff, 1967) and sacculus (Sattler & Stride, 1991). The origin of such lobes in different groups within Lepidoptera is uncertain and actually Ponomarenko (1992) pointed out that further investigations are necessary to clarify the homology of valvella in Gelechiidae to that in Lithosiinae. In this paper, we tentatively use the term valvella for the basal lobe of the valva. The definition of valvella follows Tuxen (1970). The terminology of the female genitalia is taken after Klots (1970). The following abbreviations for collections are used in this study: NIAES—National Institute of Agro-Environmental Sciences, Tsukuba; OMNH—Osaka Museum of Natural History, Osaka; OPU—Entomological Laboratory, Osaka Prefecture University, Sakai.

Faristenia kanazawai sp. n. (Figs 1, 3)

Forewing length. ♂, 6.6-7.1 mm.

Head creamy white, tinged with light gray. Frons dark gray, somewhat tinged with white; each lateral side clothed with blackish scales. Proboscis covered with fuscous scales. Antenna creamy white, irrorated with brownish gray, with fuscous annulation on each segment; scape creamy white, scattered with brownish gray. Labial palpus with dense triangular scale tuft on under margin of 2nd segment; 2nd segment blackish with whitish

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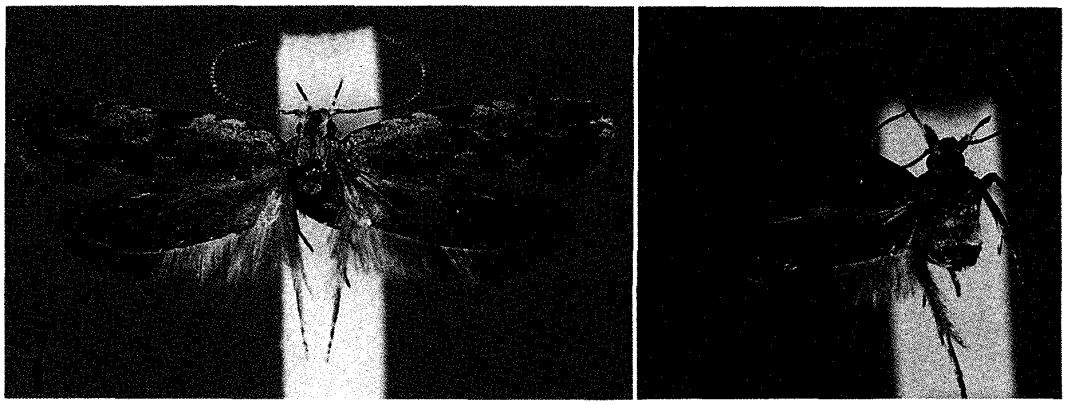

Figs 1–2. Adults of *Faristenia* spp. 1. *F. kanazawai* sp. n., ♂, holotype. 2. *F. mukurossivora* sp. n., ♂, holotype.

apical 1/3 outwardly, brownish gray with whitish dorsal and apical margins inwardly; 3rd segment almost equal to length of 2nd, white with 3 blackish rings, 1st ring narrow near base, 2nd broad at middle, 3rd suffused for about apical 1/3. Thorax creamy white, with a blackish dot on posterior angle; lateral margin with a pair of blackish dots at posterior 1/4; tegula creamy white, with blackish extreme base. Legs fuscous scattered with whitish ochreous; fore tibia with a whitish ochreous ring at apex; fore tarsus with a whitish ochreous apical ring on each segment; mid tarsus with an ochreous apical ring on each segment; hind tibia suffused dorsally with whitish ochreous hairs, with a whitish ochreous apical ring; hind tarsus suffused with a whitish ochreous apical ring on each segment. Forewing with ground color white, broadly tinged with brownish gray except for costa; a blackish dot on costa at base; costa with 5 blackish marks: 1st and 2nd small at 1/7 and 2/7, 3rd large at middle, 4th and 5th narrow oblique outwardly at before and beyond 2/3; a blackish dot on subcosta near base; a blackish elliptical mark above tornus at 2/3; plical fold with a fuscous dot at 2/7 and with an irregular fuscous streak from before middle to tornus; a fuscous dot on dorsal margin at 1/7; a series of obscure fuscous dots on costal margin and termen from apical 1/3 to tornus; cilia pale brownish gray, with a whitish median shade; dorsum with ochreous base. Hindwing pale brownish gray; cilia pale brownish gray with ochreous base.

Male genitalia (Fig. 3). Uncus setose, trapezoidal, with somewhat rounded posterior margin. Gnathos gently arched. Valva evenly curved dorsally, with slender basal half and dilated distal one, with widely rounded distal margin; ventral margin expanded ventrally into a small triangular plate at middle. Valvella about 2/5 length of valva, rather stout, sparsely setose, digitate; outer surface expanded ventrally into a triangular plate from middle to apex with dentate margin; ventral surface with a median longitudinal groove which is limited outwardly by the triangular plate and inwardly by a long narrow sclerotized fold. Juxta lobe short, triangular. Aedeagus stout, tapered apically; apex truncated, as right-side plate.

Female. Unknown.

Material examined. Holotype: ♂, Daisenji, Mt Daisen, Tottori Pref., 5. VI. 1980, I. Kanazawa (genital preparation No. TU-117) (OMNH). Paratypes. HONSHU: 1 ♂, Kisojihara, Nagano Pref., 22. VII. 1994, T. Ueda (genital preparation No. TU-713; wing preparation No. TUW-124) (OPU); 1 ♂, Iwaya, Fukui Pref., 7. VI. 1964, M. Takahama (genital preparation No. TU-184; wing preparation No. TUW-110) (OPU); 1 ♂, Mt Makiosan, Osaka Pref., 28. V. 1960, M. Okada (NIAES).

Distribution. Japan (Honshu).

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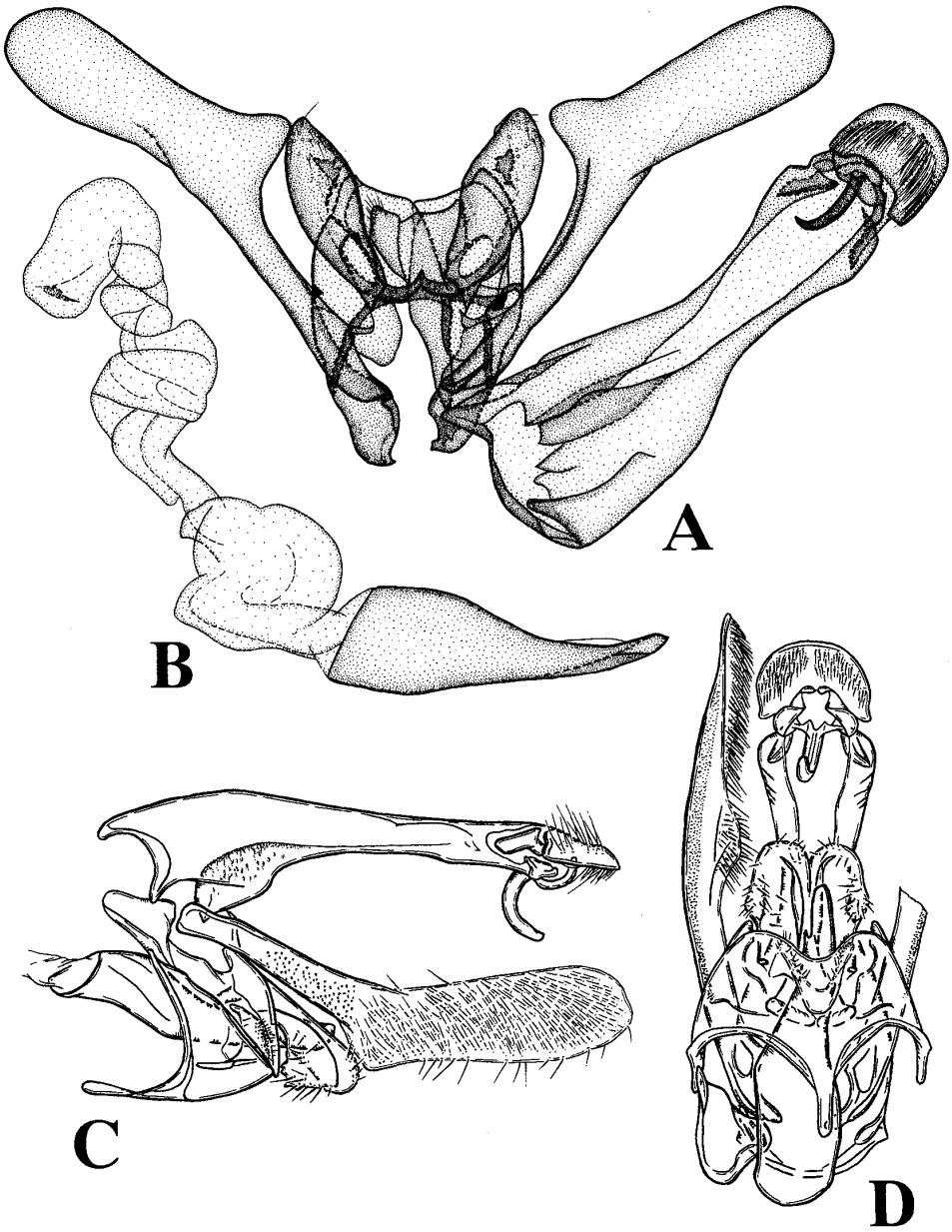

Fig. 3. Male genitalia of *Faristenia kanazawai* sp. n. A. Whole aspect (holotype: genital preparation No. TU-117). B. Aedeagus (holotype: genital preparation No. TU-117). C. Lateral aspect (paratype). D. Ventral aspect (paratype).

Host plant. Unknown.

Remarks. *F. kanazawai* sp. n. resembles *F. geminisignella* Ponomarenko, 1991 superficially, but it can be distinguished from the latter by the lack of a large elliptical blackish mark on the plical fold. The male genitalia of this new species are similar to those of *F. cornutivalvaris* Li & Zheng, 1998. However, *F. kanazawai* sp. n. differs from *F. cornutivalvaris* by the following characters: the posterior margin of the uncus is evenly rounded and the lobe of the juxta is shorter than half of the valvella, while in *F. cornutivalvaris* the posterior margin of the uncus is convex at middle and the lobe of the juxta is longer than half of the valvella. In the male genitalia, *F. kanazawai* sp. n. is also similar to *F. triangula* Li & Zheng, 1998, but

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it is distinguishable from the latter by the evenly rounded posterior margin of the uncus and the triangular median plate on the ventral margin of the valva, while in *F. triangula*, the posterior margin of the uncus is convex at middle and the ventral margin of the valva is expanded into the semicircular plate at near middle.

***Faristenia mukurossivora* sp. n.** (Figs 2, 4–6)

Forewing length. ♂, 6.2–6.8 mm; ♀, 6.5–7.4 mm.

Head and frons dark brownish gray, irrorated with whitish gray. Proboscis covered with dark brownish gray scales. Antenna dark brownish gray, mixed with whitish gray, with fuscous annulations; scape fuscous. Labial palpus with dense triangular scale tuft on under margin of 2nd segment; 2nd segment fuscous outwardly, its dorsoapical angle mixed with white scales, dark brownish gray with whitish gray dorsal margin inwardly; 3rd segment almost equal to length of 2nd, whitish, with 2 blackish rings: 1st narrow at base, 2nd broad from middle to near whitish apex. Thorax and tegula dark brownish gray, irrorated with whitish gray. Legs fuscous; fore tibia with apical ochreous rings; fore tarsus with an apical ochreous ring on each segment; mid tibia with apical ochreous rings; mid tarsus with an ochreous apical ring on each segment; hind tibia suffused dorsally with whitish ochreous hairs, with a whitish ochreous ring at apex; hind tarsus with a whitish apical ring on each segment. Forewing dark brownish gray with dense whitish gray irroration in ground color, scattered with blackish scales; 5 fuscous marks on costa: 1st and 2nd narrow, oblique outwardly, at 1/8 and 1/4, 3rd large, occupying median quarter, 4th and 5th at 5/8 and 3/4; a large, obscure fuscous mark on cell beneath 3rd costal mark; 2 blackish small dots at near apex; cilia dark brownish gray with 2 narrow whitish gray shades at 1/3 and 2/3. Hindwing pale brownish gray, scattered with ochreous; cilia pale brownish gray with ochreous base and with 2 narrow whitish shades at 1/3 and 2/3.

Male genitalia (Fig. 4). Uncus setose, trapezoidal, with somewhat rounded posterior margin. Gnathos curved near base and before apex, and almost straight at middle. Valva slender, curved inwardly in distal part, with apical 1/5 expanded dorsally into a subtrapezoidal plate bearing long bristles on inner surface; ventral margin produced inwardly into a narrow longitudinal plate from 1/3 to middle; ventral margin bearing long bristles from 2/3 to near distal end. Valvella setose, about 2/5 length of valva, digitate with rounded apex in lateral aspect, curved laterally before pointed apex in ventral aspect. Juxta lobe setose, broad and rather long, with concave ventral margin; distal margin rounded. Aedeagus gently recurved at middle with inflated basal half; apex truncated, as right-side plate.

Female genitalia (Fig. 6). Seventh tergite with sclerotized anterior margin. Pleural region between 6th and 7th segment with sclerotized region (Fig. 5). Apophysis posterioris long, about twice length of apophysis anterioris. Eighth segment sclerotized; tergite with broadly concave posterior margin; ventroposterior margin produced anteriorly, with a pair of narrow, longitudinal membranous pouches. Ostium bursae located on the level of anterior margin of 8th segment, surrounded by a ring-shaped genital plate bearing a crescent-shaped plate on dorsal part of ostium bursae. Ductus bursae coiled. Corpus bursae oblong. Signum obovate with dentate margin, with a keel-like ridge at middle.

Material examined. Holotype: ♂, Honshu, Nara, 22. V. 1960, *ex Sapindus mukurossi* em. 12. VI. 1960, M. Okada (genital preparation No. TU-110; wing preparation No. TUW-29) (OPU). Paratypes. HONSHU: 1 ♂, Shimizu, Nara Pref., 15. VII. 1995, T. Ueda (genital preparation No. TU-709; wing preparation No. TUW-123) (OPU); 1 ♀, Minoo, Osaka

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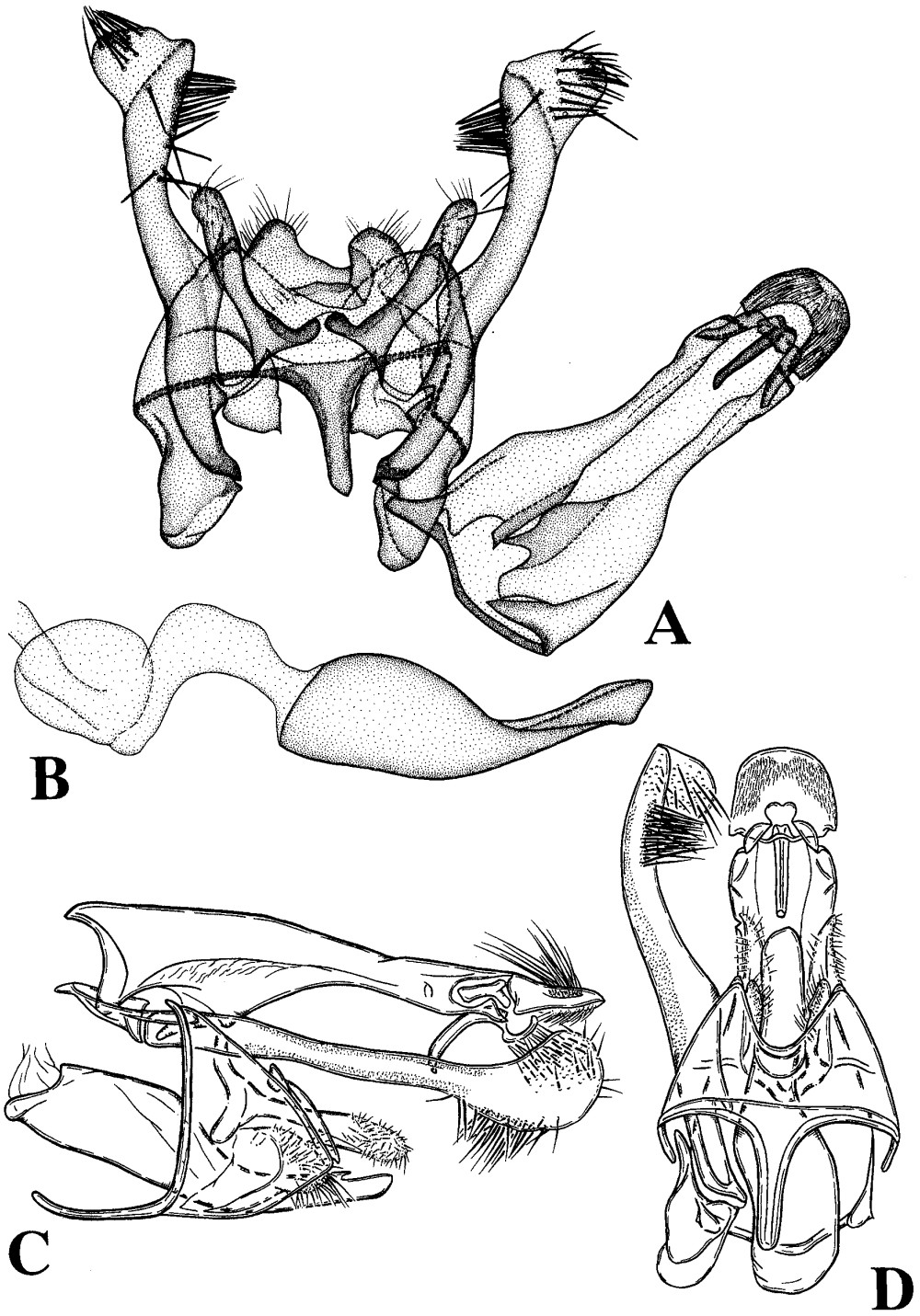

Fig. 4. Male genitalia of *Faristenia mukurossivora* sp. n. A. Whole aspect (holotype: genital preparation No. TU-110). B. Aedeagus (holotype: genital preparation No. TU-110). C. Lateral aspect (paratype). D. Ventral aspect (paratype).

Pref., 5. VII. 1988, Y. Yamamoto (genital preparation No. TU-730) (OPU); 1 ♂, same locality, 23. VII. 1992, T. Kadohara (genital preparation No. TU-109; wing preparation No. TUW-51) (OPU); 1 ♀, same label with holotype except for emergence date, em. 11. VI. 1960 (genital preparation No. TU-576) (OPU); 1 ♀, same label with holotype except for emergence date, em. 12. VI. 1960 (NIAES); 1 ♂, same label with holotype except for emergence

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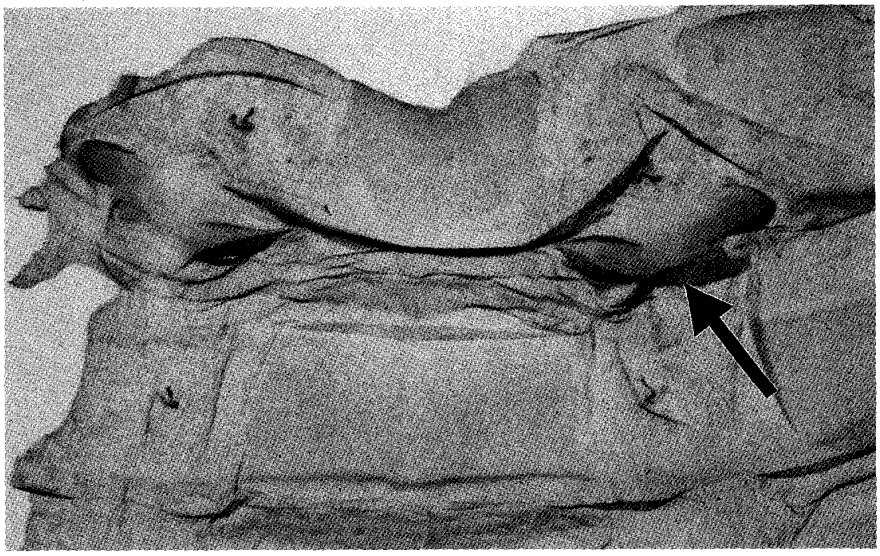

Fig. 5. Female abdominal segment of *Faristenia mukurossivora* sp. n., paratype. Arrow indicates the sclerotized part between the 6th and the 7th abdominal segments.

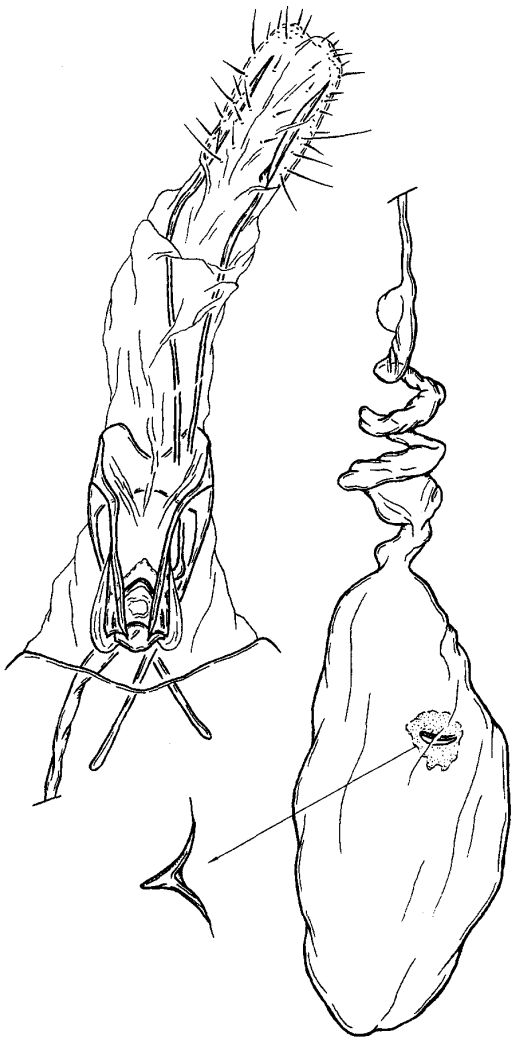

Fig. 6. Female genitalia of *Faristenia mukurossivora* sp. n., paratype.

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date, em. 13. VI. 1960 (NIAES); 1 ♀, same label with holotype except for emergence date, em. 18. VI. 1960 (genital preparation No. TU-173) (OPU).

Distribution. Japan (Honshu).

Host plant. *Sapindus mukurossi* Gaertn. (Sapindaceae).

Remarks. *F. mukurossivora* sp. n. is closely related to *F. medimaculata* Li & Zheng, 1998, but it is distinguishable from the latter externally by the lack of a large trapezoidal black blotch at middle on the costa of forewing. In the male genitalia *F. mukurossivora* sp. n. is separable from *F. medimaculata* by the rounded posterior margin of the uncus, the presence of bristles along the ventral margin of the valva and the presence of a longitudinal plate on the ventral surface before the middle, while in *F. medimaculata* the posterior margin of the uncus is produced into a knob at the middle, the valva lacks bristles along the ventral margin and the ventral margin of the valva expands into a triangular plate at the proximal end. In the female, this new species is separable from the other congeners known from Japan and Russian Far East at present time by the sclerotized pleural region between the 6th and 7th abdominal segments.

Acknowledgments

We express our hearty thanks to Prof. M. Ishii (OPU), Dr Y. Matsumura (NIAES), Mr K. Konishi (NIAES), Dr K. Yasuda (NIAES) and Mr N. Hirai (OPU) for their cooperation in our cooperating study. We are also indebted to Mr I. Kanazawa (OMNH) and Dr M. Okada (Tsuchiura) for loan of specimens and for allowing us to examine the specimens. Our grateful thanks are due to Dr T. Hirowatari for giving valuable comments on this study.

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摘　　要

日本からの *Faristenia* 属の 2 新種 (鱗翅目，キバガ科) (上田達也・M. G. Ponomarenko)

Faristenia 属は著者の 1 人 Ponomarenko によって 1991 年に設立された属で，主に旧北区に分布し，これまでに 22 種が記録されている．日本からの本属の記録は断片的になされたにすぎず，これまでに 5 種が記録されているにすぎない．今回，著者らが日本産の標本を検討した結果，*Faristenia* 属に属する次の 2 新種が見いだされた．それぞれの特徴は以下のとおりである．

Faristenia kanazawai sp. n. (Figs 1, 3) ニセクロモンノコメキバガ

前翅地色は白色で前縁を除き広く暗灰色鱗を散布する．前翅前縁に 5 つの黒色紋を持ち，中央のものが最大となる．外部形態ではクロモンノコメキバガ (*Faristenia geminisignella* Ponomarenko, 1991) に似るが，前翅翼上に長楕円の黒色紋が存在しないことによって識別できる．雄交尾器では valvella 外側面が腹面側に延び，三角形のプレートとなることで識別は容易である．雌および幼虫期は不明である．

Faristenia mukurossivora sp. n. (Figs 2, 4–6) ムクロジハオリノコメキバガ

前翅が暗褐灰色であることから，他種との区別は容易である．雄交尾器では valva 先端部が背方に半円形に広がり，棘を装うことから他種との区別は容易である．雌では，腹部第 6 節と 7 節の間の膜質部に硬化した部分が認められることから他種との識別が可能である．幼虫はムクロジを寄主植物とする．

(Accepted November 26, 1999)

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